

Minutes from the Salton Sea Air Quality Working Group Meeting on November 9, 2005

ATTENDEES:

Chuck Keene/DWR	Pamela Vanderbilt/CH2M HILL
Carrie MacDougall/CH2M HILL	John Scott/MWD
Steve Smith/SCAQMD	Leslea Meyerhoff/HCG for SDCWA
Elliot Mulberg/ARB	Cheryl Rodriguez/USBR
Vic Nguyen/DWR	Pat Cooper/Office of Senator Ducheny
Thomas Brinkerhoff/ICAPCD	Jeff Harvey/HCG for SDCWA
Doug Barnum/USGS	John Dickey/CH2M HILL
Mark Sweeney/DRI	Jane Williams/Desert Citizens Against Pollution
Vic Etymesian/DRI	Kurt Schwabe/UCR
Pat Chavez/USGS	
Bruce Wilcox/IID	

FROM: John Dickey/CH2M HILL
Pamela Vanderbilt/CH2M HILL

DATE: November 9, 2005

Chuck Keene opened the meeting by acknowledging the recent passing of Dennis Underwood, MWD's President and CEO, and observing a moment of silence. Dennis was MWD's representative to the Salton Sea Advisory Committee.

Chuck's update:

Alternatives that involve a North or South Sea alone are unlikely to go forward for further analysis, because these alternatives fail to meet many of the program objectives for water quality, habitat, air quality, etc.

Alternatives that involve construction of a barrier or barriers across the Sea have been retained for the time being, but the availability, mining, and transport of rock and other aggregate materials for barriers is a major concern, as are the potential air quality aspects of construction.

Alternatives that involve a combination of a marine lake and a smaller lake or shallow habitat complex at the north and south ends of the Sea are much more attractive. These alternatives and alternatives that involve a minimal barrier provide an array of benefits, such as cover of a great deal of the exposed playa, thereby minimizing the potential for playa-related air quality impacts. Minimal barrier and combination alternatives can be phased in over time, and allow for an adaptive process for dealing with wildlife and air quality issues.

The exposed playa areas under the various alternatives range from approximately 140,000 acres for the North Lake alternative, to very low acreages under some of the minimal barrier alternatives. Under some of the alternatives, fresher water impoundments or "cells" transition to more saline water cells, with ultimate drainage from marine (down gradient) cells to a central brine pond.

All alternatives being discussed are currently in the conceptual stage, with the details of several concepts being fleshed out as alternatives to be carried forward for further study.

Elliot Mulberg, California Air Resources Board, asked if there were screening criteria for air quality-related issues being used in development of the alternatives for further consideration. The enabling legislation states that the Ecosystem Restoration Study (ERS) cannot worsen air quality in the watershed. This limits what can be constructed and operated at the Sea.

Chuck reported that the project team is working on fact sheets for each of the alternatives, to provide information that will be discussed at the December 8, 2005 Advisory Committee Meeting. The meeting will be held at the Torres Martinez Indian Reservation in Thermal. Each alternative will attempt to meet the legislated goals and balance the priorities being discussed in the various working groups, including the air quality working group. Tradeoffs and assumptions will be noted.

The goal is to define and select alternatives for further study at or before the January 31, 2006, Advisory Committee Meeting. The Draft Programmatic EIR chapters will be provided to the Advisory Committee members for review as they are prepared to streamline reviews and responses to comments. A public draft PEIR will likely be issued sometime between late February and April, 2006, with early March as a likely date for a draft ERS with completed alternatives. The alternatives ultimately selected for more detailed analysis will vary in their potential air quality impacts, but all will include the need for further research, adaptive management, and implementation of pilot studies at the Sea. The goals of research and studies will include characterization of the emissivity of playa sediments and determination of adequate mitigation strategies to reduce, and if possible, eliminate emissions and air quality impacts.

Virtually all the alternatives proposed would require adaptive management of playa air quality issues. Pilot studies and monitoring at the Sea are key to understanding site-specific conditions and the potential for success with various dust management and control measures. For now, the Resources Agency is not assuming that the Salton Sea will be like Owens Lake. We hope to vet the air quality adaptive management approach and planning estimates with the Air Quality Working Group and the full Advisory Committee in the future.

Pamela presented the latest description of exposed areas, responsible parties, and potential air quality conditions under the no action alternative. This alternative is not likely to occur, but it must be analyzed under CEQA. It will serve as the basis for the comparisons of impacts with all the other alternatives. As a result, the underlying assumptions that go into the no action alternative should be clearly presented and understood.

Imperial County Air Pollution Control District (ICAPCD) update from Thomas Brinkerhoff:

Regulation 8 rules were passed by the County Board, with an effective date of January 2006. This includes regulations affecting management of vacant lands. The adopted regulations go to ARB for approval, and then to EPA for incorporation into the State Implementation Plan (SIP).

New air quality management plans (or SIPs) are being prepared for two other pollutants, particulate matter less than 2.5 microns in aerodynamic diameter (PM_{2.5}), and ozone. These new plans are due starting in 2007. These SIPs follow the adoption of new National Ambient Air Quality Standards (NAAQS), and EPA designation of areas that do not meet these standards (non-attainment areas). Imperial County is nonattainment for the federal ozone and PM₁₀ standards, but currently is designated as attaining the PM_{2.5} standards. The Coachella Valley area of the Salton Sea Air Basin, under the jurisdiction of the South Coast Air Quality Management District (SCAQMD), is nonattainment for the PM₁₀, PM_{2.5}, and ozone NAAQS.

SCAQMD update from Steve Smith, with input from others:

Work on the required SIPs and the supporting emissions budgets is being done now. These SIPs, or future SIPs, will cover the periods of construction and operations under the alternative ultimately recommended in the current programmatic study. The air quality impacts of the specific project proposed, and the compliance of that project with the EPA-approved SIP(s), will be analyzed under a future project-specific CEQA study.

The ultimate project will be required to be compared to the "current" EPA-approved air quality management plan (AQMP) or SIP, and the timeline can be quite long for a new AQMP to be adopted into the EPA-approved SIP. The current study will look at potential construction emissions impacts, but detailed quantitative study, modeling of air quality impacts, and the project-specific general conformity determination will be deferred in this programmatic document to the project-specific impacts study.

As an example, the EPA-approved SIP for PM₁₀ in the Coachella Valley is the 1997 version, as amended by the 1999 AQMP. As a result, the emissions budgets in the EPA-approved SIP are fairly out of date. A new AQMP was approved by the SCAQMD board in 2003, but EPA has not approved these documents into the California SIP. Therefore, it is important to acknowledge that the SIP approval process may significantly lag the ERS, PEIR, and planning process.

Steve indicated he had briefly reviewed all the draft documents, and thinks we're doing a pretty good job in terms of identification of tools, significance criteria, etc. He indicated he is now very interested in seeing how they are applied in terms of estimation of emissions and evaluation of impacts.

Chuck: Need any comments from working group members and stakeholders relatively soon, as we will be proceeding to administrative drafts for public review.

ICAQMD letter providing comments on draft documents now indicates that we can look at credits for off-lake mitigation of air quality impacts.

Steve indicated he had reviewed the SDCWA comments, and felt they had some good comments. However, he did not agree with their concerns about potentially overstating impacts, and their claims that the level of analysis was too conservative (i.e., "worst case"), not required by CEQA. As Program Supervisor for CEQA at SCAQMD, he would want to see the analysis look at the "reasonable worst case", and if not, the analysis would need to show why the selected scenario is representative.

Update on emissions modeling approach:

Chuck described the decision to proceed with the MacDougall Method in future emissions estimation for exposed playa, without use of WEPS as a comparison, as had been previously discussed. This decision was based on concerns about time and money.

WEPS could be used on a future project-specific analysis as a check. One major issue is crusting, and MacDougall method is set up to account for this. WEPS does not handle explicitly, needed to apply at back end, and time and data intensive. Imperial County is using a modified MacDougall method for their fugitive dust emissions estimation. Steve said he would check to see what SCAQMD is using.

Vic Etymesian (DRI) pointed out that none of the emissions estimation models will be particularly accurate. He recommends that we select one method and use it to compare alternatives, recognizing the inherent limitations. He recommended extreme care in any extension of results from site-specific observations to large spatial areas, such as the full extent of the future playa.

Mark pointed out that DRI will have data from current and future field testing, including collection of information on various WEPS parameters. DRI was directed by DWR to continue to collect this information, so that WEPS can be run in the future if so desired.

John Dickey provided a brief update on playa dust control and related research and development (R&D). John suggested a revised assumption for the water balance based on use of water-efficient vegetation on 50% of the exposed playa, rather than the prior assumption of water-efficient vegetation on 100% of the exposed playa (where exposed playa means playa that is exposed and not assigned some other land use, such as habitat).

Jeff Harvey, representing San Diego County Water Authority questioned where does 50% come from? If one looks at Owens Lake as an example, assuming a worst case, why not go down further in the assumption, and use 20 to 30%? In their opinion, 100% is a "worst imaginable case". They also feel it is very important to look further at dry measures, such as gravel. Jeff pointed out that he sees a lot of stable areas around the Sea, with thin vegetative cover and/or thin rocky cover. These areas seem to be stable, without any watering. The current assumptions requiring 1 to 1.5 acre-feet per acre for water-efficient vegetation and the associated requirements for infrastructure are a huge commitment and cost.

John Dickey explained that he would re-organize the memorandum to better describe the engineering thought process, and discuss dry measures. Chuck explained that no dust control measures have been eliminated at this point. Water is the back stop. We are trying to evaluate how we might deal with future problems, and what methods might work.

The group discussed how much water we should allocate for air quality measures. 100%? 50%? 30%? What is the basis for the number selected? How much water do you want to put in "trust"?

Steve Smith (South Coast AQMD) discussed our uncertainty at this level of detail. Steve felt unsure that 50% is going to be enough. His management would likely state that they need 100%, unless you can demonstrate that there will be areas that will be non-emissive. We discussed that the plan would be to provide 100% control (as feasible), but not necessarily 100% irrigation.

Perhaps one way to look at it is to think of the future area land uses. Of the Salton Sea future area (total, 100%), some of the surface will be covered by habitat, sea, facilities, roads, etc. Other areas of the surface will be exposed playa. Of the exposed playa areas, some will be stable (as demonstrated by long-term monitoring), and some of the area will be unstable. Of the unstable areas, some of the dust control measures will involve irrigation, and some will not require irrigation.

The group discussed vulnerability of various areas on the Sea floor. At other playa, surveys of surface characteristics have proven to be of limited use in predicting level of emissions, as have soil surveys. This is especially problematic at the Salton Sea, because many areas of interest are covered with water.

DRI is proposing a study of a transect from submerged area up through exposed areas with PI-SWERL, to try and evaluate conditions and trends in various parts of the Sea.

Pat Chavez (USGS):

See presentation. His research and review of satellite imagery has identified a large off-Sea emissions source located in OHV use area west of south end of Sea.

Off-line discussion: Is control of this area a possibility to establish a potential emissions reduction credit? This is a potentially sensitive subject with environmental groups. Need to ensure that emissions reduced are similar in pollutant character to those increased, and demonstrate through modeling that the distribution of emissions increases and emissions decreases do not simply shift impacts to other locations. Using off-playa credits (nearer to population) to offset on-playa impacts (far from population) should avoid negative redistribution of impacts. On-playa dust control approaches will likely have some associated degree of uncertainty. We might be able to offset some of this uncertainty with credits.

Vic Etymesian (DRI):

Vic presented on preliminary results of their wind tunnel studies, both with the large wind tunnel and with Pi-Swerl. John Scott asked about wind tunnel study of sites above -227 versus sites below -227 feet. Vic pointed out that sites below -227 feet were not emissive at all in September. Some sites were wet immediately below the crust.

John pointed out that he thought the Sea would go to -235 feet by 2015, even with mitigation water. He said the IID mitigation water is delivered on a fixed schedule, not tied to maintaining salinity levels or sea elevation.

The group asked about timing of results. Chuck indicated that we should be able to integrate the initial DRI results into the Draft PEIR, and the final DRI results into the Final PEIR.

We then discussed Research and Development (R&D), as it fits into 3 categories:

- 1) Need to do now (short term).
- 2) Need to get going and continue (long-term, high value).
- 3) Useful in long-term, could defer for the time being.

Short-term ideas:

Results of research need to be available over next 8 months; otherwise cannot incorporate findings into PEIR.

- 1) Proposals have been submitted to USBR to set up digital video cameras to film subsurface characteristics of the Salton Sea floor. For example, it is hoped that this will allow ground truthing to identify barnacle-covered areas, where surface should inhibit future emissivity of these areas. Areas shown to be covered in silty muds may prove to be more emissive than other areas in the future. However, USBR and other federal agencies are without approved budgets, on continuing resolution.
- 2) Pat Chavez suggested data evaluation and video of existing dust sources, to identify and better characterize sources near the Sea and near the OHV (off-highway vehicle) site located to the west of the Sea. Pat feels it is important to get cameras sited before winter, so that threshold-wind-speed events can be captured during the windy season.
- 3) Chuck suggested that highest priority for USBR/USGS contribution in this time frame would be evaluation of the utility and quality of existing data. For example, we could use available funding to evaluate meteorological data, such as the comparison of data from 10-meter meteorological stations to data from 2-meter CIMIS stations. Also comparison of PM10 data types, for example, 6-day data vs. hourly BAM data. Writing up the results of the USGS work on "data mining" is also of great value and priority. It is important to make sure that USGS folks working on meteorological and aerometric data get together with CH2M HILL folks working on same.
- 4) As recommended in the draft memo on this subject, the group recommended chromium speciation to better evaluate potential health effects of constituents of potential concern in soil and sediment around the Sea.

Long-term ideas:

- 1) Collect additional wind data close to the Sea, to establish better background information. Look further at meteorological and aerometric data quality and trends.
- 2) Evaluate PM10 and wind direction data for data quality and reproducibility. Ongoing comparison of PM10 data types, for example, 6-day data vs. hourly BAM data.
- 3) Study of crusting dynamics at the Sea.
- 4) Salton Sea-specific pilot studies to evaluate the benefits of dust control measures (DCMs).

- 5) Additional soil and sediment sampling and analysis, additional evaluation of potential human health issues. Important to understand health-related trade-offs associated with various alternatives. Collect sulfide data from limnology effort, as well as other human health study information, and integrate health effects information in PEIR documents.
- 6) DRI recommends seasonal and/or annual Pi-Swerl tests at the same sites, extending transect out toward shoreline, over time. This will allow evaluation of conditions as groundwater influences and other conditions change over time.
- 7) Study variables under wet playa conditions vs. dry playa.
- 8) Additional air quality monitoring at and near the Sea, including H₂S, PM_{2.5}, and toxic air contaminants. The future monitoring network will be somewhat dependent on the alternative selected for further study.
- 9) Study soils as shoreline recedes.
- 10) Study transects as sea level recedes. Look at soil characteristics, crust, emissivity levels at Salton Sea and other analogous Playa areas, such as Lake Cuhilla, Pallin Dry Lake, Bristol, Cadiz, Danby, and/or Laguna Salada. Look at analogous playa soil transformations on dewatering of other Playa. Evaluate groundwater projections and relationship to projected playa surface conditions.
- 11) Establish baseline air quality conditions. Conduct MacDougall-type calculations for the entire airshed. Review and/or conduct other studies to put the Ecosystem Restoration Study in perspective, and to evaluate relative contributions of exposed playa now and in the future. These studies include air monitoring, wind tunnel tests, modeling, current disturbance levels (e.g., OHVs), options for emissions reduction and trading.
- 12) Doug's list of research ideas from the September meeting.

Schedule update:

Project construction may potentially extend over 20 years. Implementation schedule to be discussed at length in PEIR. Need to assemble tools and data to provide additional knowledge as it is needed throughout implementation process.

Next Salton Sea Air Quality Working Group meeting is scheduled for Wednesday, 18 January, 2006, 9:30 am to 3:30 pm, at the same location (CA Department of Fish and Game Conference Room, 3602 Inland Empire Blvd., Suite C-220, Ontario, California).